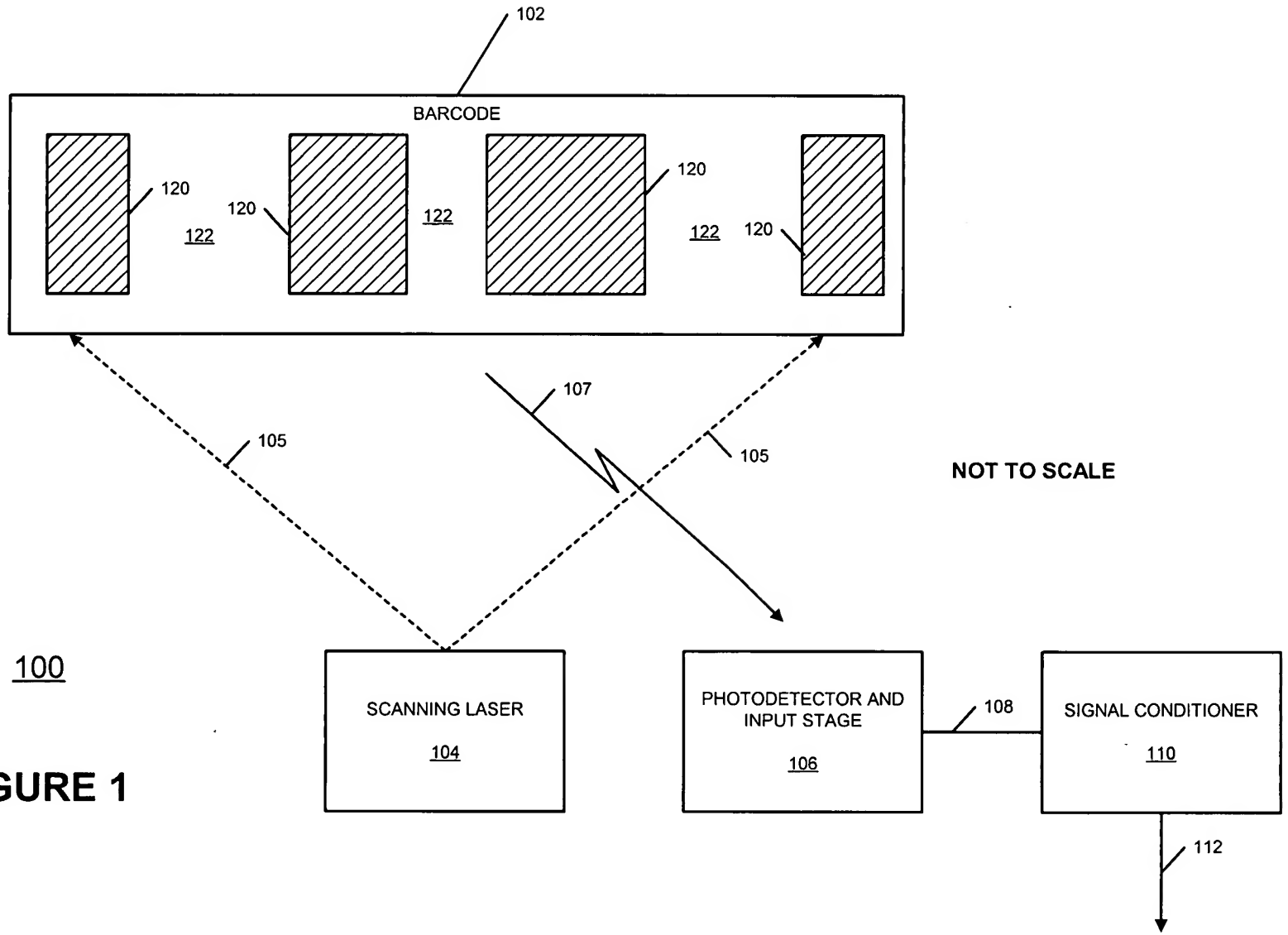
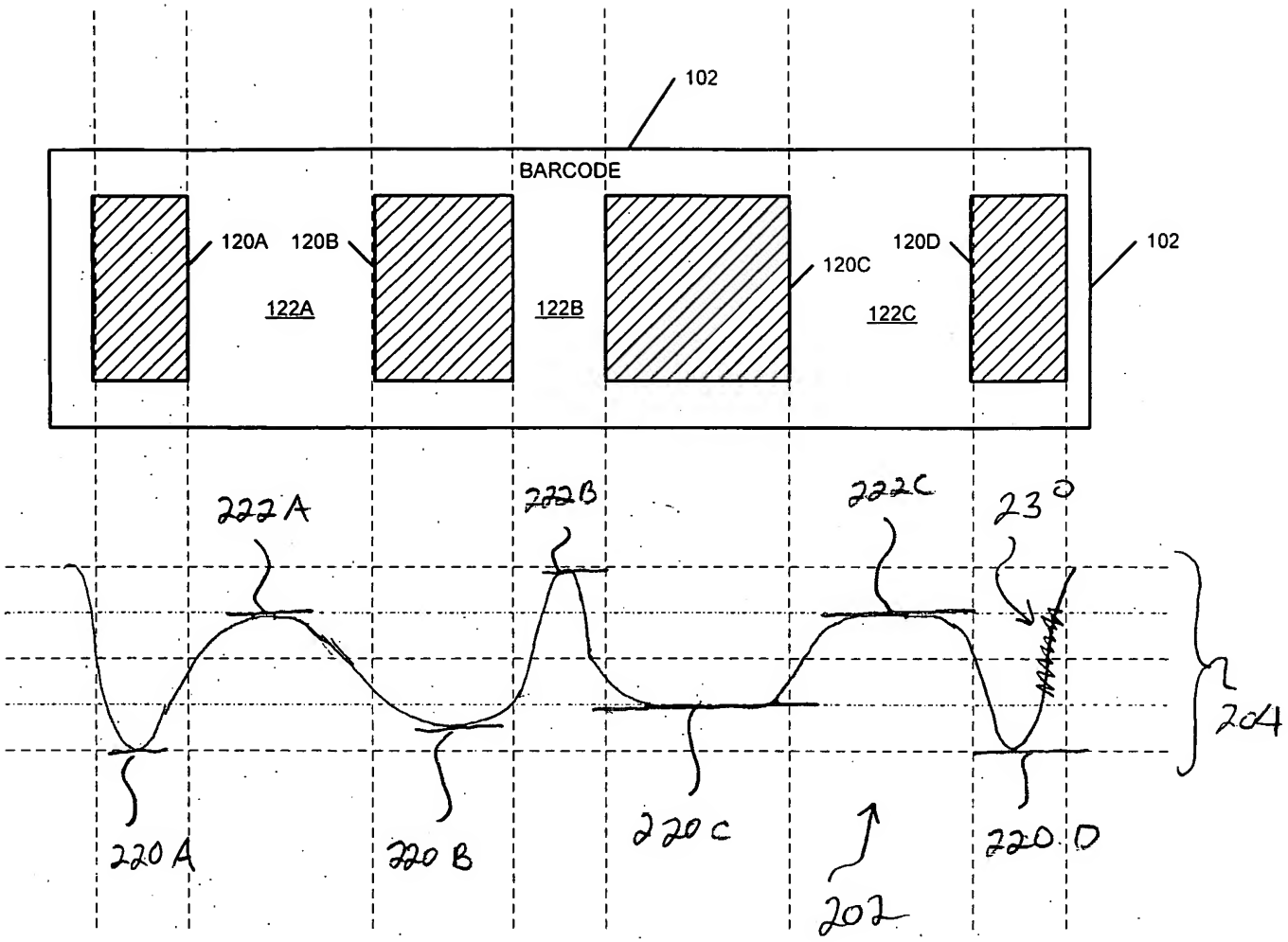

102
BARCODE
120
122
120
122
120
122
120
107
105
105
NOT TO SCALE
100
SCANNING LASER
104
PHOTODETECTOR AND
INPUT STAGE
106
108
SIGNAL CONDITIONER
110
112

FIGURE 1


102
BARCODE
120A
120B
120C
120D
102
122A
122B
122C
222A
222B
222C
230
204
220A
220B
220c
202
220D

200

FIGURE 2

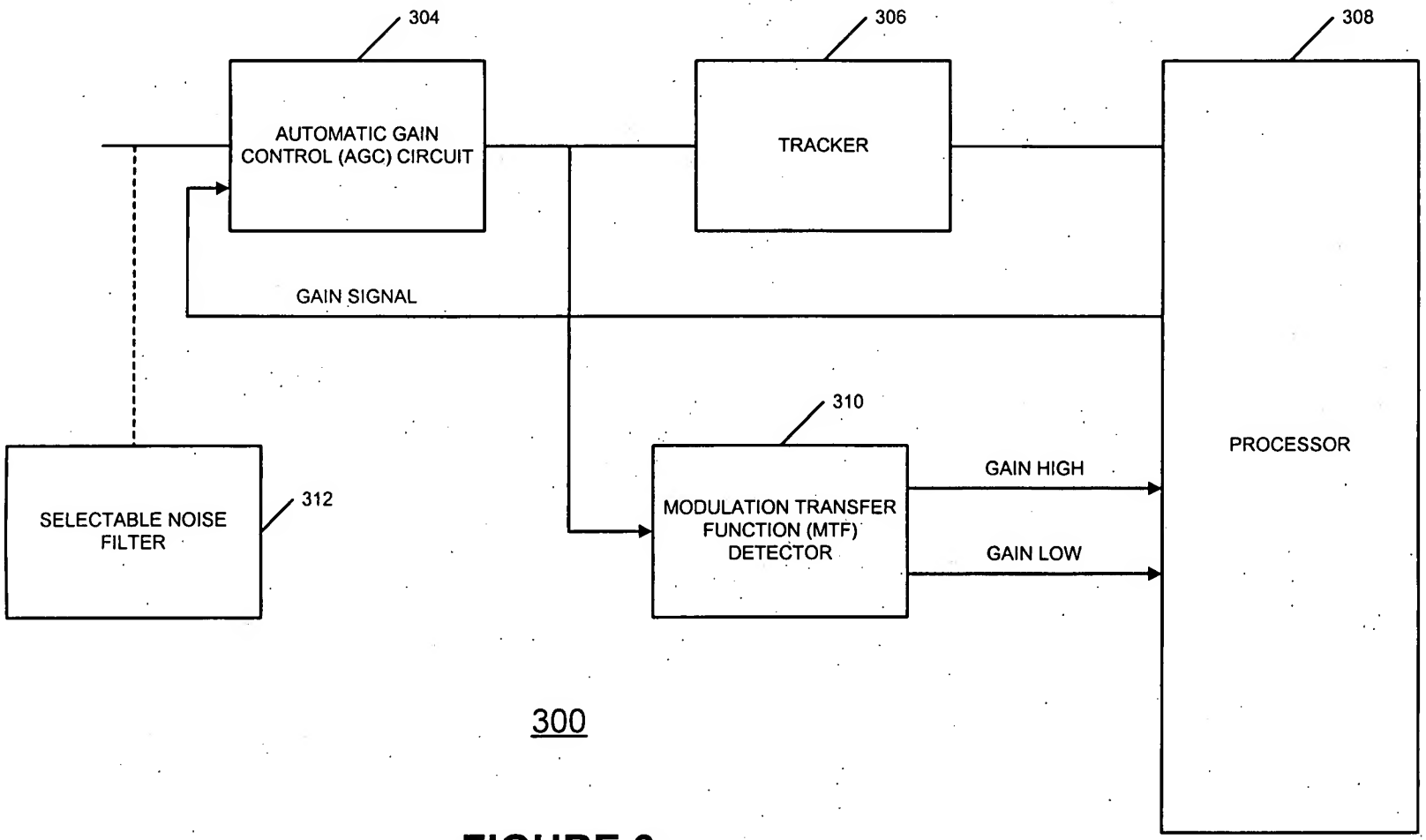
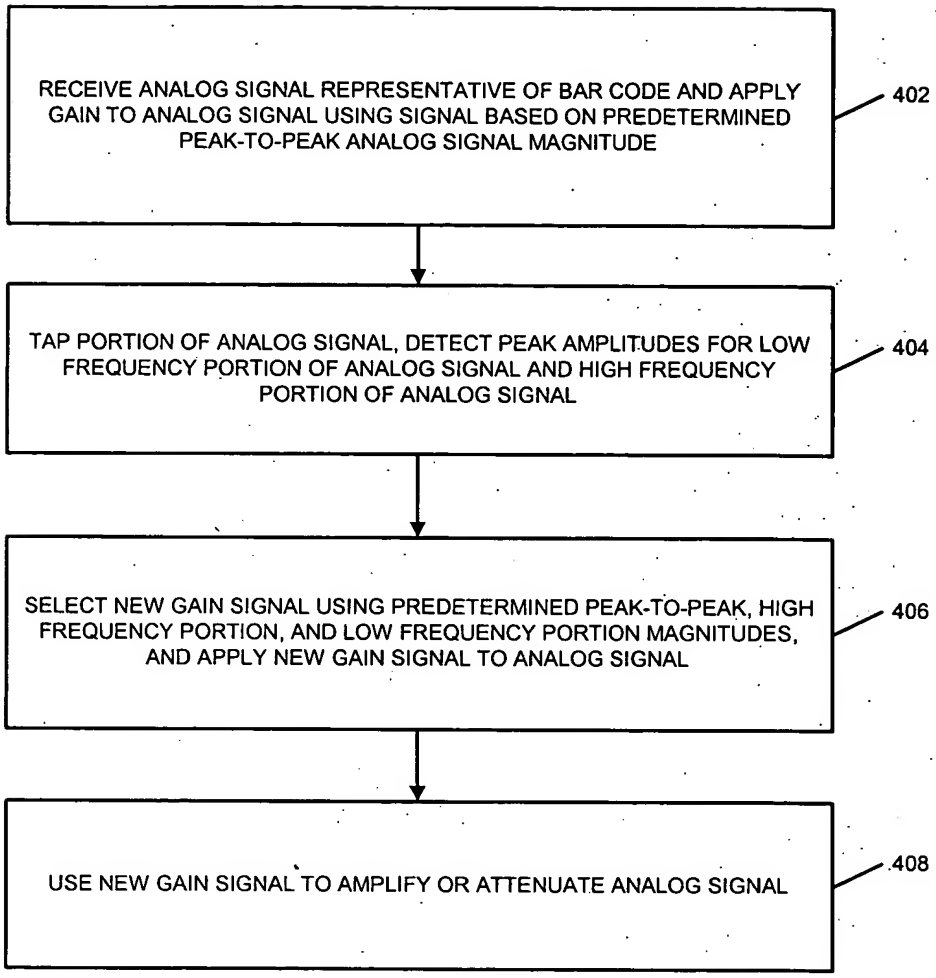

304
306
308
AUTOMATIC GAIN CONTROL (AGC) CIRCUIT
TRACKER
GAIN SIGNAL
310
PROCESSOR
SELECTABLE NOISE FILTER
312
MODULATION TRANSFER FUNCTION (MTF) DETECTOR
GAIN HIGH
GAIN LOW
300

FIGURE 3


RECEIVE ANALOG SIGNAL REPRESENTATIVE OF BAR CODE AND APPLY GAIN TO ANALOG SIGNAL USING SIGNAL BASED ON PREDETERMINED PEAK-TO-PEAK ANALOG SIGNAL MAGNITUDE
402
TAP PORTION OF ANALOG SIGNAL, DETECT PEAK AMPLITUDES FOR LOW FREQUENCY PORTION OF ANALOG SIGNAL AND HIGH FREQUENCY PORTION OF ANALOG SIGNAL
404
SELECT NEW GAIN SIGNAL USING PREDETERMINED PEAK-TO-PEAK, HIGH FREQUENCY PORTION, AND LOW FREQUENCY PORTION MAGNITUDES, AND APPLY NEW GAIN SIGNAL TO ANALOG SIGNAL
406
USE NEW GAIN SIGNAL TO AMPLIFY OR ATTENUATE ANALOG SIGNAL
408

400

FIGURE 4

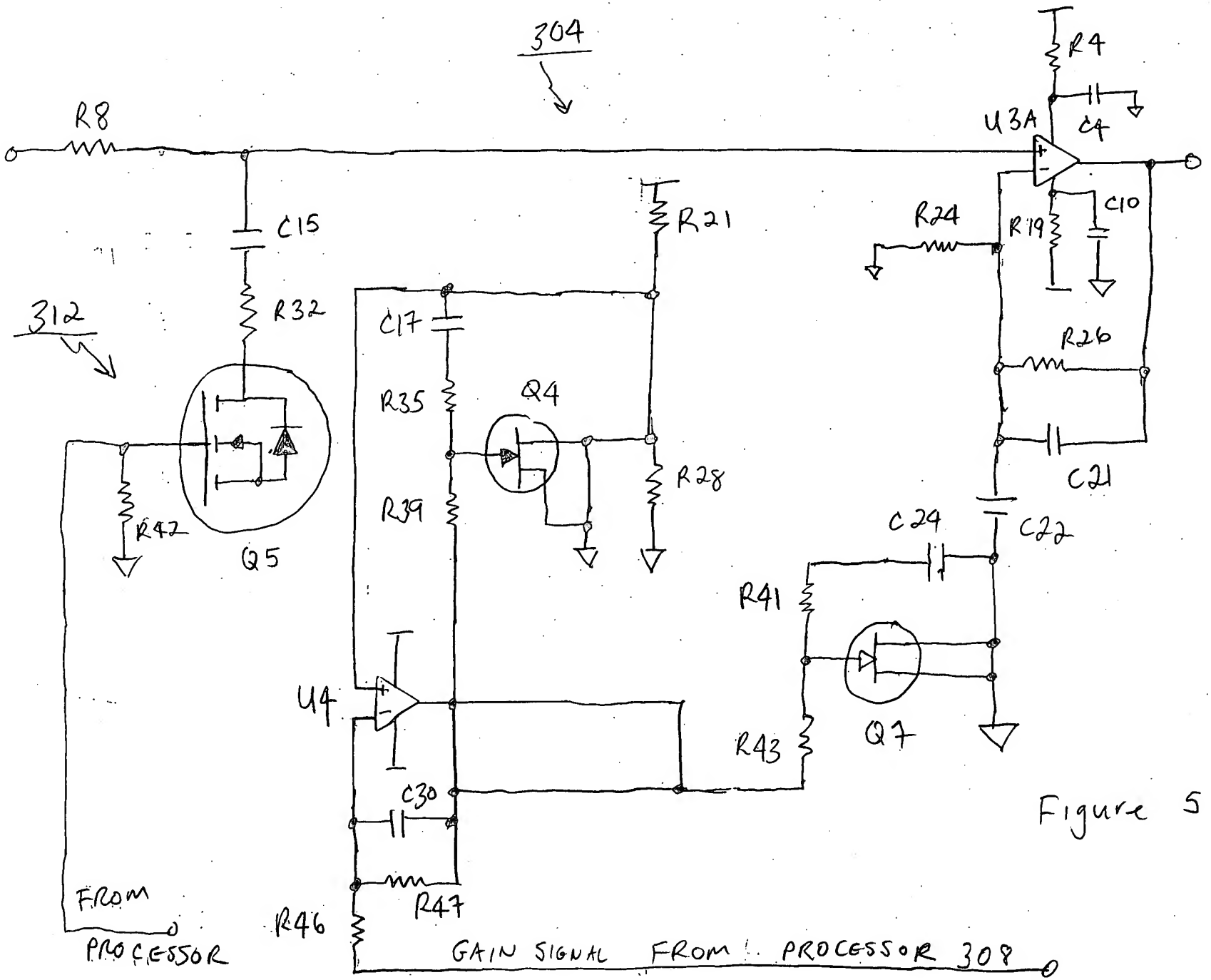

304
R8
C15
R32
312
R42
Q5
C17
R35
R39
Q4
R21
R28
U4
C30
R47
R46
FROM PROCESSOR
GAIN SIGNAL FROM PROCESSOR 308
R4
C4
U3A
R24
R19
C10
R26
C21
C22
C24
R41
Q7
R43

Figure 5

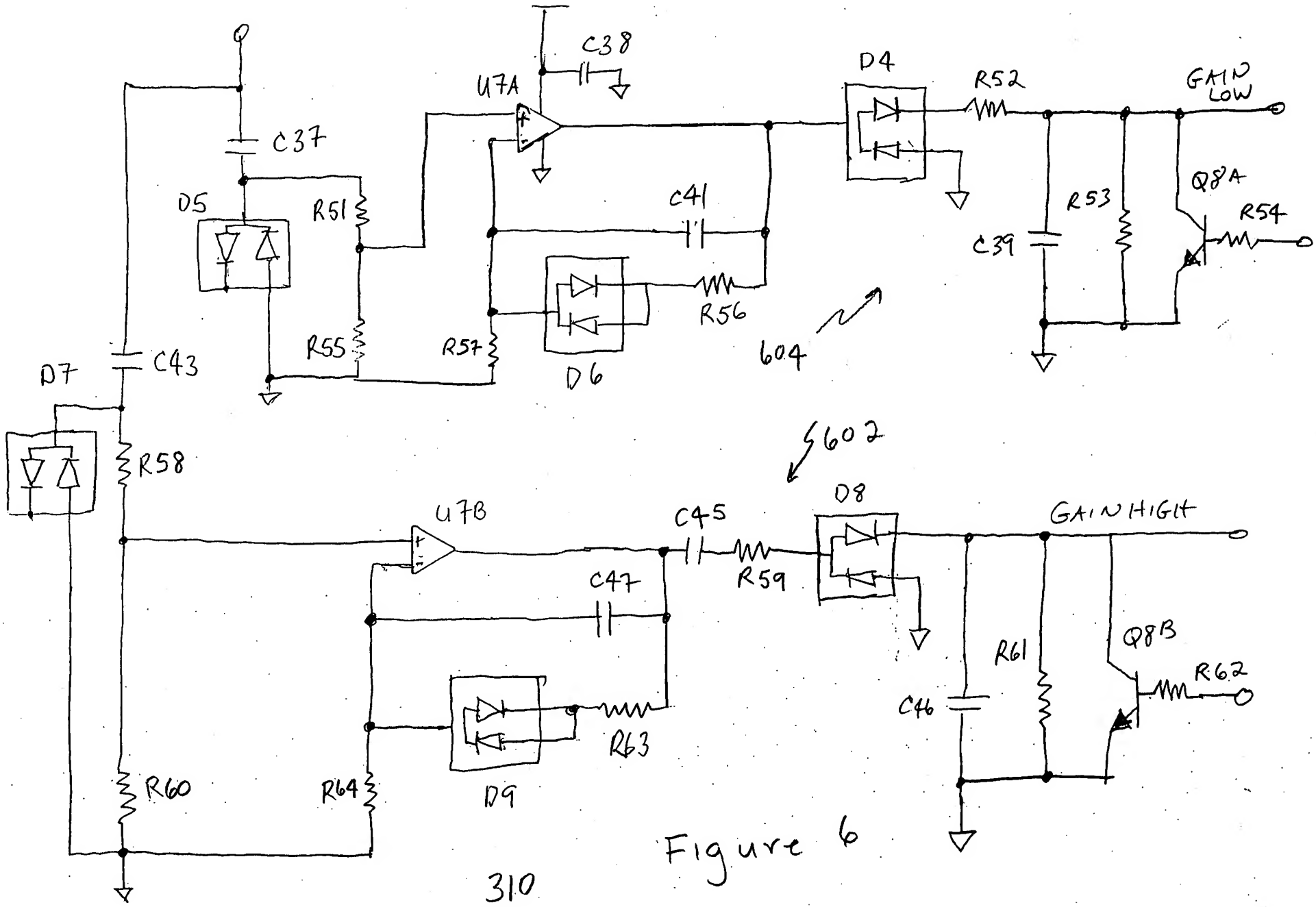

C38
U7A
C37
D5
R51
C41
D4
R52
GAIN LOW
Q8A
R53
R54
C39
R55
R57
D6
R56
604
D7
C43
R58
602
U7B
C45
D8
GAIN HIGH
C47
R59
R61
Q8B
R62
C46
R63
D9
R60
R64
310

Figure 6

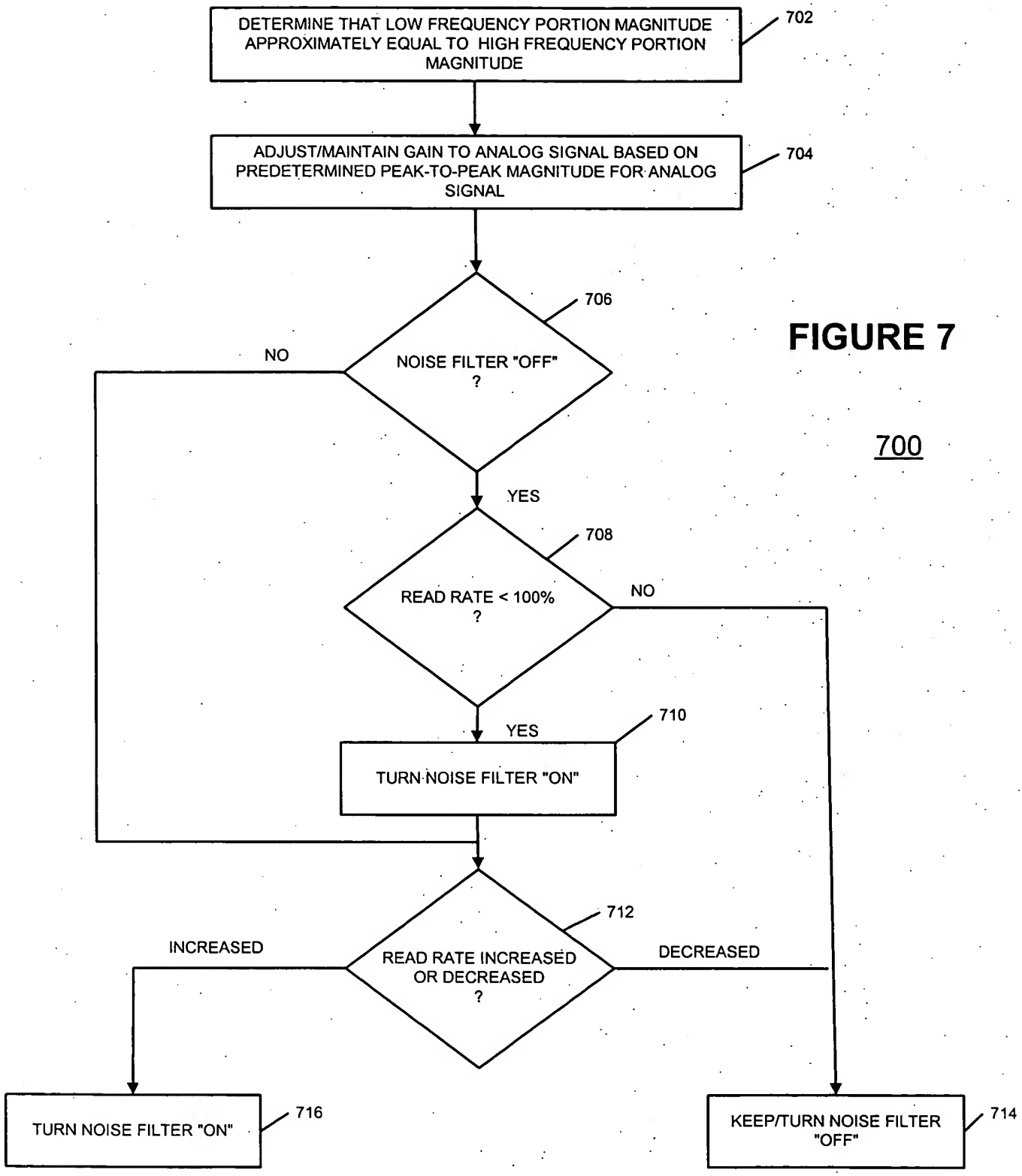

DETERMINE THAT LOW FREQUENCY PORTION MAGNITUDE APPROXIMATELY EQUAL TO HIGH FREQUENCY PORTION MAGNITUDE
702
ADJUST/MAINTAIN GAIN TO ANALOG SIGNAL BASED ON PREDETERMINED PEAK-TO-PEAK MAGNITUDE FOR ANALOG SIGNAL
704
NOISE FILTER "OFF" ?
706
NO
YES
READ RATE < 100% ?
708
NO
YES
TURN NOISE FILTER "ON"
710
READ RATE INCREASED OR DECREASED ?
712
INCREASED
DECREASED
TURN NOISE FILTER "ON"
716
KEEP/TURN NOISE FILTER "OFF"
714

FIGURE 7

700